Ground Water Steering Committee September 1, 2010
Scoring and ranking documentation

1 **Subdivision** growth rate (Score 1-5)
Subdivision scoring was based on the total number of lots under 20 acres created in the last five fiscal years (FY05-09). The counties were listed in order of number of lots. The total number of lots for the county with the highest count was divided by 5 and the list split in even increments.

2 **New Wells** (Score 1-5)
For New Wells category, used the same approach as for the subdivision category. The counties were listed in order of number of wells. The total number of wells for the county with the highest count was divided by 5 and the list split in even increments.

3 Designated **Closed Basin** (Score 0=no, 5=yes)
Compared the nominated watershed area to the Montana State Closed Basin map from DNRC.

4 **Flood to Sprinkler conversion** (Score 1-5)
Information was requested in nomination form. Using local input, generally scored high (5), to low (1) acres converted compared to other nominations. Little information was available. (Ultimately this field was dropped for FY11-13.)

5 Impaired **Water Quality** (Score 0=no, 5=yes)
Compared the nominated watershed area to the Montana State 303(d) TMDL list from DEQ. Scored (5) if a waterbody in the study area is on the 2008 list, or (0) if no waterbodies are on the list.

6 Expansion of **Industrial** water use (Score 0 or 5)
Requested local input if there was doubt about industrial expansion. Looked for new wells in GWIC listed for industrial use, however that misses some well uses such as coalbed methane, so local knowledge is necessary. Sites ultimately ranked on committees knowledge of existing or potential for industrial expansion which was scored as a 5, otherwise scored as 0.

7 Expansion of **Agricultural** water use (Score 0 or 5)
If the site was nominated due to agricultural expansion (occurring or potential) or site has likelyhood for aqricultural expansion site was scored as 5, otherwise scored as 0. Sites where agricultural land is being replaced by subdivisions were scored as 0. [Note that using the GWIC database to track new agricultural wells was not used due to the large number of "stock" wells installed on domestic-sized lots that appeared to skew the results to non-agricultural areas]

8 **Population** density (Score 1-5)
For Population, the county total for 2009 was ranked and scored on a percentile basis. The counties were listed in order of population. The total population for the county with the highest count was divided by 5 and the list split in even increments.

9 **Water Class** or usability (Score 1-5)
For the water class, used the DEQs surface water quality classification in DEQ's surface water rules. The classes include, A, B, C, D, E, F, G and I. "A" through "G" generally go from higher to lower quality, and "I" means it's impaired. Scored highest (5) for best quality (A) and then, B=4, C=3, D=2, E/F/G = 1, but

then scored I = 5 (if it's impaired that would place it as a high priority for fixing). If a study area had surface waters of different classes the two values were averaged.

10 **Information** already known (Score 1-3)
Checked for existing publications and reports. Requested local input in nominating form. Generally, little or no local reports, only statewide information available=1; some local reports=2; GWAP or similar local scale work underway or completed and data are available=3.

11 System **Complexity** (Score 1-3)
Based on available information for the site; A single aquifer system with common issue=1; a multiple aquifer system and unknown geologic setting=2; complex geology with multiple possible recharge and/or discharge scenarios=3.

12 and 13, Growth Plan and Contentious were both dropped from consideration for this prioritization. Neither category appeared to provide useful information that helped identify crucial study sites.

14 Highly valued **Ecological** water system (Score 1-4)
Used input on Watershed Intergrety from MT FWP at http://fwp.mt.gov/gis/maps/caps/ . Click on the plus sign next to "Crucial Areas Supporting Data", then click on plus sign next to "Habitat Layers", then click to view "Watershed Integrity" which brings up the map of the state (another icon next to 'watershed integrity' describes what was used to develop the rating map)). Scored nominated watersheds from 1 to 4 (4 being best integrity). Some require averaging between areas.

15 Basin fill or bedrock **Aquifer Systems** (Score 1-3)
Based on site geology. Intermontane basin fill material or other single layer unconsolidated aquifer=1; bedrock aquifer=2; a combined flow system that includes flow between both=3.

16 **Efficiency** of effort (No score – to be used as a tie-breaker, if necessary)
If an adjacent and related sub-watershed is nominated where the GWIP program can combine field work and analysis, an efficiency in effort can be realized.

17 **Diversity** of hydrogeology and issues (Score 1-3)
A simple hydrogeologic question that has been investigated or is known=1; a more complex issue=2; a complex issue and one that presents an issue that has not previously been investigated=3.

18 **Controlled** groundwater **Area** (Score 0=no, 5=yes)
Compared the nominated watershed area to the Montana State Controlled Groundwater Area map from DNRC. Not in an controlled area=0; in a controlled area=5.

19a Availability of **Match Funds committed 2010** (Score 0=no, 5=yes)
Information is requested on the nomination form. Match must be documented during the project in the amount indicated. Secured and available match for the project, a score of 5. Otherwise a score of 0.

19b **Match Funds have been requested** (Score0=no, 2=yes)
Information is requested on the nomination form. Match must be documented during the project in the amount indicated. If a proposal or other request for matching funds has been submitted but not evaluated for approval or denial, a score or 2; otherwise a score of 0. If matching funds have been secured, and additional matching funds requested, then both categories may receive a high score.

Map Number	Name	County	RANKING	Subdivision 2010	New wells 2010	Closed Basin 2010	Water quality 2010	Industrial 2010	Agricultural 2010	Population 2010	Water class 2010	Information 2010	Complexity 2010	Ecological	Aquifer systems 2010	Efficiency 2010	Diversity 2010	Controlled area 2010	Match Funds committed 2010	Matching funds requested 2010	TOTAL SCORE 2010	Contact
			0	rank 1-5	rank 1-5	5=Yes 1=No	5=Yes 0=No	rank 1-5	5=No 0=Yes	rank 1-5	rank 1-5	rank 1-3	rank 1-3	rank 1-4	basin=1 bedrock=2 both=3	No score (+ or - for tie break)	Complex=3 simple=1	5=Yes 0=No	match=5, no=0	2=Yes 0=No		
41	Stevensville Bitterroot River	Ravalli	1	3	5	5	5	2	5	2	4	3	2	1	1		3	0	0	0	41	Al Pernichele
37	Boulder River Valley	Jefferson	2	1	2	5	5	1	5	1	4	2	2	3	1		2	0	5	2	41	Bob Sims
7	Hamilton	Ravali	3	3	5	5	5	2	5	2	4	3	1	3	1		1	0	0	0	40	
16	Manhattan	Gallatin	4	4	5	5	0	3	5	4	4	1	2	1	3		3	0	0	0	40	
33	Coalbed Methane	Big Horn/Rosebud/Powder River	5	1	1	0	5	5	5	1	3.5	3	3	2.5	2		2	5	0	0	39	
39	Madison Valley Ennis to Three Forks	Gallatin/Madison	6	3	3.5	5	5	1	5	2.5	4	2	1	2	1		3	0	0	0	38	
34	North Fork Flathead River	Flathead	7	5	5	0	0	2	0	4	5	1	2	4	2		2	0	5	0	37	Jeff Hughes
27	West Billings	Yellowstone	8	3	4	0	5	1	0	5	4	3	2	1	1		2	0	5	0	36	Candi Beaudry
14	Townsend, Toston	Lewis&Clark/Broadwater	9	3	3.5	5	5	1	5	2	4	1	2	2.5	1		1	0	0	0	36	
36	Big Sky	Gallatin/Madison	10	4	3.5	5	5	1	0	2.5	4	1	3	2.5	2		2	0	0	0	35.5	
20	West Yellowstone	Madison	11	2	2	5	5	1	0	1	4	1	2	3	3		1	5	0	0	35	
11	Greenfield Bench	Teton	12	1	1	5	5	1	5	1	4	3	2	1.5	2		3	0	0	0	34.5	
31	Clear Lake aquifer	Sheridan	13	1	1	0	5	2	5	1	3	3	2	1.5	3		2	0	5	0	34.5	Mickey McCall
38	Madison Valley Quake Lake to Ennis Lake	Madison	14	2	2	5	5	1	5	1	4	2	1	3	1		1	0	0	0	33	
32	Buried river channel aquifer	Richland	15	1	1	0	5	3	5	1	4	2	2	1.5	3		2	0	0	2	32.5	Julie Goss
5	Missoula Valley	Missoula	16	2	4	5	0	3	0	4	4	3	3	1.5	1		2	0	0	0	32.5	
40	Jefferson River groundwater	Jefferson/Madison	17	1.5	2	5	5	1	5	1	4	2	1	2	1		1	0	0	0	31.5	Ted Dodge
9	Summit Valley	Silver Bow	18	1	2	5	5	2	0	2	4.5	2	1	1.5	3		2	0	0	0	31	
23	Stillwater Valley	Stillwater	19	1	2	0	5	1	5	1	4	2	2	2.5	3		2	0	0	0	30.5	
10	Priest Butte Lake	Teton	20	1	1	5	5	1	5	1	4	1	2	1.5	1		1	0	0	0	29.5	
8	Georgetown Lake	Granite/Deerlodge	21	1	1	5	5	1	0	1	4.5	1	2	2	3		1	0	0	0	27.5	
28	East Billings	Yellowstone	22	3	4	0	0	1	0	5	4	3	2	2	1		2	0	0	0	27	
15	Three Forks	Broadwater	23	2	2	5	5	1	0	1	4	1	2	2	1		1	0	0	0	27	
3	Smith Valley	Flathead	24	5	5	0	0	1	0	4	3.5	2	2	2	1		1	0	0	0	26.5	
29	Roundup	Musselshell	25	1	1	5	5	1	0	1	3	1	2	1.5	3		1	0	0	0	25.5	
21	Belt, Monarch	Cascade	26	1	2	0	5	1	0	3	3	1	2	3	3		1	0	0	0	25	
25	Pryor Mountains	Carbon	27	1	2	0	0	1	5	1	4	1	2	2	3		1	0	0	0	23	
1	Eureka	Lincoln	28	3	3	0	0	2	0	1	4	1	2	2.5	3		1	0	0	0	22.5	
24	Rock Creek terrace aquifer	Carbon	29	1	2	5	0	1	0	1	4.5	2	2	1.5	1		1	0	0	0	22	John Prinki
30	Flaxville Gravels	Valley/Roosevelt	30	1	1	0	0	1	5	1	4	2	2	2.5	1		1	0	0	0	21.5	
22	Little Belt Mountains	Judith Basin/Fergus	31	1	1	0	0	1	0	1	3.5	1	2	2	2		1	0	5	0	20.5	
19	Pine Creek	Park	32	1	2	0	0	1	0	1	4	1	2	2.5	3		1	0	0	0	18.5	
4	Noxon	Sanders	33	2	2	0	0	1	0	1	4	1	1	2	3		1	0	0	0	18	
26	Park City	Stillwater	34	1	2	0	0	1	0	1	4	1	2	1	3		1	0	0	0	17	